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THE BIRDS OF THE OBI GROUP, CENTRAL MOLUCCAS.

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RIGHT in the middle of the Moluccan Archipelago, between the Halmahera group or Northern Moluccas, and the Southern Moluccas (Ceram, Buru, and Amboina), lies the little Obi group, consisting of one large island, Obi or Obi Major, and the small islands of Bisa, Tapa, Obi-latu (Obi-latoe), Lojang, Gomomo, and a few other very tiny, insignificant islets. All the latter are so close to the dominating, large central island of Obi Major that it is safe to suppose that their fauna is the same, except that many of the forms found on the large island are absent from the outlying islets; and what we know of the birds from these small islands bears out our supposition.

The first explorer of Obi was the well-known traveller Bernstein, who for a number of years explored the eastern islands for the Dutch Government. His collections are preserved in the Leyden Museum. He discovered *Lycocorax obiensis* and most of the other species peculiar to Obi, but they were chiefly described by others. No collections were then made on Obi until, in October 1883, it was visited by the yacht *Marchesa*, when a fair collection was made by Dr. F. H. H. Guillemard and his party. The species are enumerated in the *P. Z. S.* 1885. pp. 562-9, and in the "Cruise of the *Marchesa*." New discoveries were, however, not made, as the collectors stayed only a few days and did not penetrate into the interior. The next bird collector who landed in the Obi group was the late William Doherty, who collected a good many birds there in September 1897. In 1898, from October to December, Mr. Lucas, of Brussels, stayed on Obi Major, and employed some native bird-skinners to collect for him. We are obliged to him for several rare and new species. Last, but not least, Mr. John Waterstradt made a stay of some months on Obi Major, and his natives made large collections of bird skins. They ascended the hills in the interior, where they obtained the new *Cryptolopha everetti waterstradti* and other interesting species.

The collections made by Bernstein are, as said before, in the Leyden Museum. Of the birds brought home by Dr. Guillemard the majority are in the Tring Museum. Doherty's collection is also at Tring, as well as that of Mr. Lucas and a selection from Mr. Waterstradt's skins.

We may safely assume that we are now acquainted with nearly all the resident birds of Obi, and that only an ornithologist might still do valuable ornithological work there.

Obi is well wooded—in fact, almost entirely clothed with forest—and the

mountains in the interior reach a height of about 5000 ft. It was for a long time uninhabited, but within the last ten years some villages have sprung up.

Though I have in all more important cases adhered to the system of quoting the original reference and habitat in full, I have sometimes disregarded it in order to save time.

The systematic arrangement of the following list is that of Salvadori's "Ornitologia della Papuasia," in order to facilitate comparison with that work.

1. *Cuncuma leucogaster* (Gm.).

Mr. Lucas brought with him several specimens. He quotes as native names "Koheba gunong" and "Koheba laut." Bernstein had obtained it already on Obi, also Guillemard (*P. Z. S.* 1885. p. 562).

2. *Haliastur indus girrenera* (Vieill.).

Native name, according to Lucas, is "Koheba."

Guillemard (*l.c.*) mentions *Haliastur intermedius*, but I am sure the birds from Obi must all belong to *girrenera*.

3. *Baza subcristata rufa* Schleg.

Baza rufa Schlegel, *Vog. Nederl. Ind., Valkvog.* pp. 41. 78 (1866: "groep van Halmahera).

We have a specimen from Mr. Lucas, obtained on Obi between October and December 1898. The native name is, according to Lucas, also "Koheba." The Obi specimen agrees with others from Batjan and Halmahera. (Cf. *Nov. Zool.* VIII. 1901. p. 379.)

4. *Tinnunculus moluccensis* Bp.

Tinnunculus moluccensis Bp., *Consp. Av.* i. 1850. p. 27 (ex Hombron et Jacq., Amboina!); Guillemard, *P. Z. S.* 1885. p. 526 (Obi).

Tinnunculus moluccensis orientalis Meyer & Wigglesw., *B. Celebes* i. 1898. p. 79 (Halmahera group).

Guillemard and Lucas obtained specimens on Obi Major.

According to Meyer and Wigglesworth the form from the Halmahera group—to which Obi belongs more or less—is to be separated from that of the Southern Moluccas (Amboina, Burn, Ceram, Goram, Peling). The material which I have been able to examine so far does not justify this separation. I can see two very distinct races—namely, a darker form, with more brown cheeks and ear-coverts, darker under wing-coverts and lighter under surface, inhabiting the Moluccas, and a lighter one, with more greyish cheeks and ear-coverts, much whiter under wing-coverts and lighter underside, inhabiting Celebes and the Lesser Sunda Islands to Kangean and Java. It is true that some few specimens from the Southern Moluccas are somewhat intermediate, but the majority before me are exactly like those from the Northern Moluccas, and all agree best with the latter. Moreover, some examples from the Moluccas are variable and lighter than usual. The form from Amboina is the typical *moluccensis*, and I must unquestionably unite with it the *orientalis* of Meyer and Wigglesworth, while certainly recognising *T. molucc. occidentalis* as distinct.

5. *Astur griseogularis obiensis* subsp. nov.

[*Astur griseogularis* G. R. Gray, *P. Z. S.* 1860. p. 343 ("Batchian, Gilolo, Ternate.") (Typ. loc. Batjan—cf. *Cat. B. i.* p. 124).]

A. griseogularis form. typ. simillimus, sed minor. Al. ♀ ad. 230—233, ♂ cr. 200 mm.

Hab: In Insula Obi Major dicta.

Three ♀♀ ad., March, April, June, 1902, Waterstradt coll.

♂ fere ad., March 1902, Waterstradt coll.

♀ juv., Lucas coll., No. 91, 1898.

The specimens from Obi Major have such small dimensions, compared with a series from Batjan (Platen, Waterstradt, Doherty, Wallace coll.), Ternate (Doherty coll.), and Morty (Dumas coll.) that I feel perfectly justified in separating them subspecifically under the name *obiensis*. While the wing of adult *females* of *A. griseogularis griseogularis* measures 258—280, that of the *females* from Obi is only 230—233 mm. long, a measure sometimes even surpassed by the *males* of the typical form, which are, of course, ever so much smaller than the *females*. The *male* of *A. griseogularis griseogularis* has the wing 215—240, while that of *A. g. obiensis* has it no longer than about 200 mm. Similar differences are obvious in the tails. The tails of adult *females* of the typical form from Batjan, Ternate, Halmahera, and Morty are always over 200 mm. long, that of *obiensis* about 185. Also the metatarsus and toes are generally smaller in Obi specimens. In most of the *females* the under surface is more or less distinctly barred, but the bars become often obsolete (apparently in the oldest birds), and no trace of them is to be found in very adult *males*, though I have not seen a *female* without a trace of light bars.

Type of *A. g. obiensis*: ♀, Obi Major. 6. iv. 1902, No. O.67 Waterstradt coll. in Mus. Rothschild.

6. *Accipiter erythrauchen* Gray.

Accipiter erythrauchen Gray, *P. Z. S.* 1860. p. 344 (Gilolo=Halmahera).

♀ ad, ♀ juv., Obi Major. Native name "Koheba."

The adult *female* agrees with typical specimens.

The supposed young figured by Schlegel (*Vog. Nederl. Indië, Valkvog.* Pl. XIII. fig. 4. pp. 22. 60) is evidently erroneously united with this species. *Accipiter erythrauchen* belongs to the same group as *A. ceramensis* and *A. sulaensis* (not to be confounded with *soloensis*!). The adult *A. ceramensis* is greyish underneath, while the adult *sulaensis* lacks the rufous collar on the upper back. The young of all these forms are boldly striped underneath, without a trace of cross-markings. I have described the young *A. sulaensis* (with an almost cinnamon upperside) in *Nov. Zool.* 1898. p. 126, and the young of *A. ceramensis* (under the name of *A. rubricollis*) is described in *Cat. B. Brit. Mus.* i. p. 144. The young *A. erythrauchen* has the upper surface very deep brown, the crown darkest, almost black. Each feather is widely barred with white, and more or less buffy rusty colour towards the base, or at least has a white or whitish base. There are narrow rufous fringes to the tips of the feathers. Remiges deep brown, with deeper slaty brown bars, inner webs pale cinnamon for the basal half. Rectrices dark brown, with deeper, somewhat slaty-blackish bars, inner webs with a cinnamon wash towards the base. Underside whitish buff, with wide deep brown central stripes, but without any cross-markings whatever.

7. *Ninox rufostriata* (Gray).

Athene rufostriata G. R. Gray, *P. Z. S.* 1860. p. 344 (Gilolo=Halmahera).

One specimen, marked "♂," was obtained by Waterstradt's hunters on Obi Major on March 26th, 1902. This specimen agrees with the type of *Ninox rufostriata* in the British Museum, except that it is perhaps a little paler underneath and considerably smaller. The wing of *N. rufostriata* from Halmahera measures 285—295, while that of the Obi example is only about 258 mm. long. Whether this discrepancy is due to sexual or individual variation, or is a racial character, I am unable to say at present, the material in collections being very scanty. I know only of the type in London, three more from Halmahera in Leyden (Bernstein coll.), and two from Morty Island in the Tring Museum, the latter agreeing in every respect with the type. Their wings are 285 mm. long.

8. *Cacatua albus* (P. L. S. Müll.).

Psittacus albus Müll., *Natursyst. Suppl.* 1776. p. 76 (ex Daubenton, *Pl. Enl.* 263, Moluccas).

Cacatua alba Guillemard, *P. Z. S.* 1885. p. 562.

Dr. Guillemard recorded *C. albus* from the little island of Bisa in the Obi group. Mr. Lucas sent a specimen said to come from Obi Major. He gives "Gatala" as the native name.

9. *Tanygnathus megalorhynchos* (Bodd.).

Psittacus megalorhynchos Bodd., *Tabl. Pl. Enl.* p. 45 (1783: ex Daubenton, *Pl. Enl.* 713: La Nouvelle Guinée).

Messrs. Doherty and Waterstradt sent some examples from Obi, where it was also obtained by Mr. Lucas' hunters.

10. *Geoffroyus cyanicollis obiensis* (Finsch).

[*Psittacus cyanicollis* S. Müll., *Verh. Land- u. Volkenk.* pp. 108. 182 (1839—1844: Gilolo=Halmahera: p. 182).]

Pionias obiensis Finsch, *Papag.* ii. p. 389 (1868: Obi).

Geoffroyus cyanicollis obiensis Rothsch. & Hart., *Nov. Zool.* 1901 p. 86 (Obi—differences and variations discussed).

Bernstein, Guillemard, Waterstradt, and Doherty obtained specimens on Obi Major.

11. *Eclectus roratus* (P. L. S. Müll.).

Collected by Bernstein and Doherty, as well as Waterstradt, on Obi Major.

12. *Lorius garrulus flavopalliatus* Salvad.

[*Psittacus garrulus* Linn., *Syst. Nat.* ed. x. p. 100 (1758: Hab. in Asia. We must regard Halmahera as the typical locality, as this form is only known from that island).]

Lorius flavopalliatus Salvad., *Ann. Mus. Civ. Gen.* x. p. 33 (1877: Obi, Batjan).

I can only look upon *Lorius flavopalliatus* as a subspecies of *Lorius garrulus*. There seems to be no appreciable difference between the two, except that *flavo-*

*palliatu*s has a large yellow patch on the interscapulum, while the latter is wholly red, or red with small yellow spots, in *L. garrulus garrulus*.

*Lorius garrulus flavopalliatu*s was obtained on Obi by Bernstein, Bruijn's hunters, Doherty, Lucas, and Waterstradt. Guillemard found it on Obi Latu and Obi Major. It is called by the Malays "Luri."

13. *Eos riciniatus obiensis* Rothsch.

[*Psittacus riciniatus* Bechst., *Kurze Uebers.* p. 69 (1811: "Moluckische Inseln"—I substitute Ternate as the typical habitat).]

Eos variegata obiensis Rothsch., *Bull. B. O. C.* x. p. xvi. (Nov. 1899: Obi Major).

(Probably Mr. Rothschild is right in accepting the name *variegatus* of Gmelin (ex Latham), for the species, but the description of the under wing-coverts as yellow makes it rather doubtful if we can accept that name, and Mr. Rothschild now agrees with me that it is safer to adhere to *riciniatus* Bechst.).

As already pointed out by Mr. Rothschild, the adult Obi birds have the entire head and neck uniform red, and the greater wing-coverts and scapulars much more black, almost uniform black, while most of the wing-coverts in typical *riciniatus* are mostly red. Other birds—we take them to be younger individuals—have the head red with only a small purplish blue patch on the hinder part of the crown, and a collar of the same colour round the neck; but the collar and the sincipital patch are not connected, while in typical *riciniata* they are widely connected, seldom almost interrupted. We have now eight Obi examples, collected by Guillemard, Lucas, Doherty, and Waterstradt, and twenty typical *riciniata* from Batjan, Halmahera, and Ternate for comparison, and the characters stated by Mr. Rothschild to distinguish the Obi form are very conspicuous if this series is compared, though single younger individuals may sometimes be indistinguishable. According to Lucas these birds are called by the natives "Perkiet." (Guillemard, *P. Z. S.* 1885. p. 564.)

14. *Hypocharmosyna placentis* (Temm.).

One example from Lucas, who says it is called by the natives "Burong Bandera." Also obtained by Waterstradt's hunters.

15. *Cuculus saturatus* Blyth (Probably migrant).

Cuculus saturatus Hodgs., *Blyth. Journ. A. S. Beng.* xii. p. 942 (1843); Blanford, *Fauna Brit. India, Birds* iii. p. 207 (1895); Finsch, *Notes Leyden Mus.* xxiii. p. 102 (1902).

♂. Obi Major, September 1897, W. Doherty coll. (Probably a migrant from the north.)

16. *Cacomantis insperatus* (Gould).

Cuculus insperatus Gould, *P. Z. S.* 1845. p. 19 (New South Wales).

Cacomantis insperatus Shell., *Cat. B.* xix. p. 273. 1891; Rothsch. & Hart., *Nov. Zool.* 1901. p. 185, note under no. 27.

Cacomantis dumetorum Finsch, *Notes Leyden Mus.* xxii. p. 85 (1900).

Cacomantis assimilis Salvad., *Orn. Pap.* i. p. 337 (1880).

Salvadori mentions Obi Major, on the authority of Bernstein. We have one adult bird from Lucas ("Burong swangi" of the Malays), also three young ones from Waterstradt, apparently belonging to this species.

17. *Scythrops novaehollandiae* Lath.

Bernstein obtained it on Obi Major.

18. *Centropus goliath* Bp.

Lucas sent a specimen from Obi Major. "Burong Jackies."

19. *Centropus javanicus* (Dumont).

Lucas also sent it from Obi Major. Native name "Cuscus."

20. *Rhyticeros plicatus* (Penn.).

Obi Major, fide Lucas. Native name "Burong Tahon."

21. *Merops ornatus* Lath.

Obi Major, Waterstradt, and fide Lucas. Native name: "Radjah udang buri."

22. *Alcedo ispida hispidoides* Less.

Doherty, Waterstradt, and Lucas obtained this kingfisher on Obi Major. "Bill black, basal half (about) dull red below" (Doherty). The specimens are of a very fine blue above. Bernstein obtained this bird already on Obi, and so did Guillemard (*P. Z. S.* 1885. p. 566). Our Obi birds are not smaller than usual.

23. *Alcyone pusilla* (Temm.).

"♂" jun., "♀" ad., Obi, May, June 1902, Waterstradt coll. A dark zone across the breast, caused by the blackish tips to the feathers; forepart of crown and back greenish.

24. *Ceyx lepida uropygialis* Gray.

[*Ceyx lepida* Temm., *Pl. Col.* iv. Pl. 595. fig. 1 (1836: Amboina).]

Ceyx uropygialis Gray, *P. Z. S.* 1860. p. 348 (Batjan, Ternate).

Ceyx lepida uropygialis Hart., *Nov. Zool.* 1901. p. 97 (Northern Moluccas).

The northern form of *C. lepida*, easily distinguished by its differently coloured light blue tips to the feathers of the pileum and other characters, described by me in 1901, is common on Obi Major, where specimens have been taken by Bernstein, Doherty, Lucas, and Waterstradt. Native name "tintis." "Iris chestnut, feet coral red, bill vermilion" (Doherty). Waterstradt's hunters met it in the hills at 2000 ft. above the sea.

25. *Halcyon diops* (Temm.).

This species was already obtained on Obi Latu by Bernstein. Doherty and Waterstradt sent specimens from Obi Major. Native name "Radja udang."

26. *Halcyon chloris* (Bodd.).

Bernstein, Doherty, and Lucas met with this kingfisher on Obi Major, Guillemard on Bisa.

27. *Halcyon sanctus* Vig. & Horsf.

Obtained on the Obi Islands by Bernstein, Waterstradt, and Doherty. The latter sent it from Obi Major and Bisa.

28. **Halcyon saurophaga** Gould.

Obi Major : Bernstein, Doherty. " Feet blackish. Bill : upper mandible, commissure, and tip of lower mandible black ; rest white " (Doherty).

29. **Tanysiptera hydrocharis obiensis** Salvad.

Tanysiptera obiensis Salvadori, *Ann. Mus. Civ. Gen.* x. p. 302 (1872, ex Schlegel, Obi Major) ; Salvadori, *Orn. Pap.* i. p. 433 (1880) ; Guillemard, *P. Z. S.* 1885. p. 567 (Obi Major and Bisa).

Tanysiptera dea obiensis Rothsch. & Hart., *Nov. Zool.* 1901. p. 160.

All collectors have obtained this beautiful kingfisher. Doherty described the iris as " deep brown, the feet brownish green, bill deep vermilion."

30. **Eurystomus orientalis australis** Swains.

Obi Major : Bernstein, Lucas, and Waterstradt. Malayan name " tjektjek."

31. **Caprimulgus macrurus** Horsf.

Obi Major : Bernstein and Doherty.

32. **Macropteryx mystacea** (Less.).

Obi : Bernstein (Mus. Leyden) and Lucas (Mus. Tring).

33. **Collocalia esculenta** (L.).

" ♀ " ad., Obi Major, June 1902, John Waterstradt coll.

34. **Monarcha diadematus** Salvad.

Monarcha diadematus Salvad., *Ann. Mus. Civ. Gen.* xii. p. 321 (1878 : Obi).

There is a series of twenty-two, collected by Doherty and Waterstradt, of this flycatcher before me, which is only known from Obi. It is, however, not easy to understand the plumages of this species. What are evidently the youngest birds in the series have the whole upper surface slate-grey, the feathers of the forehead with rufous edges, the wings dark brown, tail black, lateral pair of rectrices large, second pair with smaller white tips ; chin pale grey, foreneck and breast cinnamon, rest of under surface white, sides washed with cinnamon. The majority of the specimens have the forehead black, separated from the dark ashy grey (or slate-grey) upperside by a band of orange-rufous ; chin and upper throat black, lower throat and breast pale orange-buff (or cinnamon), abdomen white, sides of body washed with orange-buff (or cinnamon). These birds, fully agreeing with the description in the *Catalogue of Birds* (vol. iv. 1879. p. 419) of the supposed adult male, are considered by Count Salvadori (*Orn. Pap.* ii. 1881. p. 19) to be younger males. I have been inclined to be of the same opinion ; but these birds are quite frequent on Obi, and those before me show no signs of immaturity, so that now I doubt if they will ever lose their rufous breast and band on the crown. The females corresponding to this dress are less black on the upper throat, and perhaps a little paler on the breast and band on the crown, and have shorter wings. Then there is another plumage, evidently the most perfect one, and described by Salvadori (*l.c.*) as that of the fully adult male, but not mentioned in the *Catalogue of Birds*. In this the band separating the black forehead from the grey sinciput is white, throat and

breast white, or more or less faintly washed with orange-buff or cinnamon, and the white band on the crown has also sometimes a faint wash of cinnamon. It is difficult to say if these birds, when younger, have been cinnamon on breast and crown-band. The white tips to the rectrices vary in extent. In the lateral pair they occupy both webs, or almost only the inner web, trespassing only a little on to the outer web; on the second pair they vary in extent, and the third pair is either entirely black or with a small white patch. The iris is "deep chesnut, feet bluish black, bill leaden blue, tip black" (W. Doherty).

35. *Monarcha chalybeocephalus nitens* (Gray).

[*Muscicapa chalybeocephalus* Garn., *Voy. Coq. Zool. Atlas* Pl. XV. fig. 1 (♀) (1826: ex Nova Hibernia).]

Myiagra nitens Gray, *P. Z. S.* 1860. p. 352 (Batchian, Wallace coll., and Ternate).

Doherty collected four *males* and three *females* on Obi Major. Waterstradt sent an adult *male*. ♂: "Iris deep brown, feet black, bill leaden blue, black at tip." ♀. "Iris deep brown, feet black, bill black, gape red." In *Nov. Zool.* 1899. p. 208 I have discussed the various local forms of *Monarcha chalybeocephalus*. The form from the Northern Moluccas, *M. chalybeocephalus nitens*, is certainly separable from typical *chalybeocephalus*, as well as from the other forms. The wing is shorter (♂♂ wing 78—80 mm.), and the *female* is decidedly darker, more brownish, on the upper surface.

36. *Rhipidura tricolor* (Vieill.).

Muscicapa tricolor Vieillot, *Nouv. Dict.* xxi. p. 430 (1818: Timor). (The locality Timor is erroneous, and I substitute New Ireland as the typical locality.)

Doherty obtained two *males* on Obi Major.

37. *Rhipidura obiensis* Salvad.

Rhipidura obiensis Salvadori, *Ann. Mus. Civ. Gen.* vii. p. 987 (1875: Obi Major).

Doherty and Waterstradt sent a nice series from Obi Major; Guillemard (*P. Z. S.* 1885. p. 570) obtained it also on Bisa Island.

38. *Rhipidura torrida* Wall.

Rhipidura torrida Wallace, *P. Z. S.* 1865. p. 477. Pl. XXVIII. (Ternate).

Mr. Waterstradt sent a single specimen, marked "♂," of a *Rhipidura*, which I think must belong to *Rh. torrida*, though its wing is only 63 mm. long. Part of the tail is missing, and there are rather wide cinnamon-rufous tips to the upper wing-coverts, indicating, it seems, immaturity. Otherwise, however, this specimen agrees with a series from Batjan, collected by William Doherty. Batjan is a new locality for *Rh. torrida*, which is hitherto only known from Ternate. *Rh. torrida* is most closely allied to *Rh. rufifrons* of Australia, and not easily distinguishable. Generally the under tail-coverts are strikingly richer cinnamon, and the head and back, rump, and base of tail darker. The tips to the rectrices seem to be always very light, whitish, while in *Rh. rufifrons*, on the other hand, they are sometimes equally white, but more often of a very light greyish brown. These forms and others are better treated as subspecies, I think, but require more study.

39. *Myiagra galeata* Gray.

Myiagra galeata, Gray, *P. Z. S.* 1860, p. 352 (Batjan).

A series from Obi Major agree with Batjan specimens, and are therefore typical *Myiagra galeata*.

Dr. Finsch (*Notes Leyden Mus.* xxii, p. 203, 1901) declares that *Myiagra goramensis* Sharpe, described from a single specimen, evidently with an abnormal or discoloured bill, is specifically valueless. It is doubtless true that the distribution hitherto accepted for these forms—*i.e.*, *M. galeata* ranging from the Northern Moluccas to Buru and Amboina, and *M. goramensis* alone on Goram, is incorrect; but at the same time it is true that there are local differences between these birds. All those before me from Batjan, Halmahera, and Obi have the crown of a glossy greenish steel-black, in contrast to the slaty grey-blue back and rump; the lores, a narrow line on the forehead, just above the bill, are of the deepest black, the ear-coverts blackish. The wing (*males*) measures 65—70 mm.

The specimens from Goram have the crown not glossy greenish steel-black, but metallic slate-grey, scarcely or only little darker than the back and rump. The lores are also black; the ear-coverts are blackish. The wing measures 73—74 mm. The examples from Buru have the head like those from Goram, or even still paler, not in any marked contrast to the back and rump. The lores are less blackish, not much deeper than the crown, like the ear-coverts; wing 68—71 mm. I am, therefore, obliged to distinguish three subspecies, from the *males* alone, the *females* being not very distinct, and our series of them rather poor.

A. *Myiagra galeata galeata* Gray: lores and line on forehead deep black, ear-coverts rather blackish, crown very dark steel-green, in marked contrast to the back, wings 65—70 mm. Northern Moluccas. (Specimens from Batjan, Halmahera, Ternate, and Obi examined.)

B. *Myiagra galeata goramensis* Sharpe: similar to A, but crown less dark, less in contrast to the back, wing rather longer, 73—74 mm. Goram and Ceramlaut (Kühn coll.).

C. *Myiagra galeata buruensis* subsp. nov.: head scarcely in contrast to the back, lores and ear-coverts not deep black, absolutely no dark line on forehead, wing 68—71. Buru.

Type: ♂, Kayali, Buru, October, 1898, No. 2391, Dumas coll. (Everett's label), in Mus. Rothschild.

40. *Muscicapa griseisticta* (Swinh.) (Migrant).

♀, Obi Major, 1. iv. 1902, Waterstradt's hunters. (Migrant from the north.)

41. *Cryptolopha everetti waterstradti* subsp. nov.

Cryptolopha, *C. everetti* dictae typicae simillimus, sed gula maxima pro parte flavescens, gula summa modo albida.

Hab: In montibus insularum Batjan et Obi Major dictarum. Typus ex Batjan.

Mr. John Waterstradt sent one skin from Obi Major, obtained on April 16th, 1902, and thirty-one from Batjan, shot in the mountains between 5000 and 7000 ft. All these birds resemble the bird described by me as *Acanthopneuste** *everetti* [Nov.

* It will doubtless appear to be very inconsistent that I placed this bird two years ago in *Acanthopneuste*, now in *Cryptolopha*. But on several occasions I have already remarked that there is a group of birds neither agreeing properly with typical *Cryptolopha*, nor with *Phylloscopus*. I am, however,

Zool. VIII. (1900) p. 239] from the mountains of Buru; but, while in the latter the whole throat is dirty white, in *C. waterstradti* the uppermost portion of the throat only is whitish, the rest yellow, or yellowish, the feathers being yellow, whitish in the centre. These birds, therefore, closely resemble the young of *C. everetti*, which have the entire throat, up to the bill, yellowish, but the underside is brighter yellow, and it cannot for a moment be supposed that all the thirty-one specimens from Batjan and the one from Obi, all alike, are immature—in fact, they are evidently nearly all adult birds. The crown is not so greyish as in *C. everetti everetti*, nor so olive-green, uniform with the back, as in the young of the latter, but darker, more brownish olive. The superciliary line is mostly even more obscure. The ear-coverts are very conspicuously spotted, being deep olive-brown, almost blackish, with whitish centres, much less uniform than in typical *everetti*. The inner edges to the inner webs of the remiges are more yellowish, as are also the margins to the inner webs of the middle rectrices. The abdomen seems to be, as a rule, deeper and brighter yellow, and the greenish olive of the sides apparently more extended over the abdomen. Wing 55—61, tail 40—42 mm. Bill (in skin) black, feet (in skin) slaty.

Type: "♀," Batjan, 5000—7000 ft., July 1902. No. B.81. Waterstradt coll., in Mus. Rothschild.

42. *Stoparola panayensis* (Sharpe).

Eumyias panayensis Sharpe, *Trans. Linn. Soc.* 2nd series, *Zool.* i. p. 326 (1879: Panay, Philippine Islands).

I am much puzzled by two flycatchers, marked as *male* and *female*, sent by Mr. Waterstradt from Obi Major, from 2000 ft. above the sea. They agree with *S. panayensis* from Panay and Negros in every way, except that the feathers of the chin and throat are slightly brighter blue and much longer. These two specimens, however, are freshly moulted, one showing a few spotted feathers of the juvenile dress, and I believe that in the Philippine birds these feathers would be equally long if we had equally freshly moulted ones. On the other hand, the occurrence of a Philippine form of restricted habitat on Obi Major is most remarkable. It cannot easily be supposed that an inhabitant of a tropical island like Panay migrates to the Moluccas, but I cannot at present classify our two Obi examples with anything else than the typical *Stoparola panayensis* (Sharpe).

43. *Graucalus papuensis melanolora* (Gray).

[*Corvus papuensis* Gmelin, *Syst. Nat.* i. p. 371 (1788, ex Daubenton, habitat in Nova Guinea).]

Campephaga melanolora Gray, *P. Z. S.* 1860, p. 353 (Batjan and Ternate).

Evidently not very rare on Obi Major, where Doherty obtained a series of five examples. Bernstein found it already on Obi. I find that—as already mentioned by Salvadori in *Orn. Pap.* ii. p. 135—specimens from the Halmahera group and Obi are smaller than typical New Guinea birds, and therefore prefer to make use of Gray's name *melanolora* for the former. The following measurements of the wings will be of interest:—

Halmahera: 159, 159, 157, 157, 157, 155, 148 mm.

afraid they cannot be called *Acanthopneuste*, as the type of *Acanthopneuste* is *borealis*, a true *Phylloscopus*, in my opinion. I refrain from creating a new genus for these birds, and call them now again (provisionally) *Cryptolopha*. In Dr. Sharpe's *Handlist* iii. p. 275, *C. preshytis* and *everetti* are not mentioned, probably because recorded as *Acanthopneuste*.

Obi Major : 157, 157, 155, 154 mm.
 Kapaur, New Guinea : 148, 145, 143 mm.
 Konstantinhofen, New Guinea : 144 mm.
 Dorei, New Guinea : 143 mm.
 Mysol : 152 mm.
 Salwatty : 149, 150 mm.

44. *Edoliisoma obiense* Salvad.

Edoliosoma obiense Salvad., *Ann. Mus. Civ. Gen.* xii. p. 329 (1878); id., *Orn. Pap.* ii. p. 151 (Obi).

Obi : Bruijn, Bernstein, Guillemard, Doherty, Lucas, Waterstradt. There is a great variation in immature *males* and *females*. While the adult *female* is below cinnamon, above cinnamon-brown or chestnut-brown, with a slaty-grey crown, some examples have the crown of the same chestnut-brown as the back; these must be younger birds, although they have a uniform cinnamon underside. Others, doubtless immature, have blackish cross-markings on the underside; another one—probably an immature *male*, though we have a specimen moulting from a rich crimson plumage to the adult bluish slate one—is underneath pale buff with blackish cross-marks, above of a curious pale brownish grey colour, crown-feathers with narrow white tips. Doherty describes the iris as deep brown, the bill and feet as black. Native name, “Burong miniak” (Lucas).

45. *Edoliisoma marginata* Wall.

Campephaga marginata Wallace, *P. Z. S.* 1863. pp. 19. 34 (Burn).

One specimen was obtained on Obi Major by one of Mr. Waterstradt's hunters on April 17th, 1902. I am inclined to think that it is a straggler from Buru, and not a native of the Obi group of islands.

46. *Lalage aureus* (Temm.).

Ceblepyris aureus Temminck, *Pl. Col.* 382. fig. 2 (1825) (“Timor”—*errore!*. I accept Ternate as the typical habitat).

Doherty and Waterstradt obtained specimens on Obi Major. Both sexes have the “iris deep brown, feet nearly black, bill black” (W. Doherty).

47. *Dicrurus dohertyi* Hart.

Dicruropsis sp.? Guillemard, *P. Z. S.* 1885. p. 571 (Bisa).

Dicrurus dohertyi Hart., *Nov. Zool.* 1902. p. 441 (Obi Major).

A series from Doherty and Waterstradt. This form is apparently nearest to *D. megalornis* of the Key Islands, but has a shorter tail and a much less high and arched beak. Specimens sent by Bruijn from Obi Major were by Salvadori (*Orn. Pap.* ii. p. 174) united with *D. pectoralis* from Sula, but they are very different. The Obi bird is larger, has a longer and higher bill, larger feet, longer wing and longer tail; the iris is brown, not crimson; wing, ♂, 169—171, ♀, 167—170; tail, ♂, 142—148, ♀, 146—149; bill from forehead to tip, 38 mm.

48. *Pachycephala obiensis* Salvad.

Pachycephala obiensis Salvad., *Ann. Mus. Civ. Gen.* xii. p. 330 (1878; Obi); id., *op. cit.* xv. p. 45 (1879); id., *Orn. Pap.* ii. p. 219.

Doherty obtained this bird on Obi Major and Bisa, Waterstradt on Obi Major.

"Iris deep brown, feet purplish black, bill black." This form, as well as others, is a close ally of *P. melanura*, and will in future be considered a subspecies of the latter.

49. *Pachycephala johni* sp. nov.

Pachycephala corpore supra olivaceo-brunneo, remigibus secundariis pallidius marginatis; pileo griseo-schistaceo. Cauda brunnescente-nigra. Corpore maris subtus toto rufo-cinnamomeo, feminae guttore pectoreque plus minusve nigro-brunneo striolatis. Long. tot. ca. 140—150; al. ♂, 82—83, ♀, 78—79½; cand. 60—61; rostr. 12—13; metatars. 19 mm.

Hab. In insula Obi Major dicta.

This remarkable new *Pachycephala* was obtained by Doherty and Waterstradt. Doherty sent a single adult *male*, shot in September 1897; Waterstradt four examples, with uniform rufous-cinnamon underside, which must be an adult *male* and three *females*, though one of them may be an immature *male*.

The back, rump, and upper tail-coverts are olive-brown, the remiges blackish slate, primaries very narrowly, secondaries broadly margined with a paler greyish olive-brown, the crown slaty-grey; under surface from bill to tail rufous-cinnamon, the supposed (*females* and immature *males*?) with narrower or wider shaft-stripes down the centres of the feathers of the throat, breast, and upper part of abdomen. Doherty marked the iris as "deep crimson-brown, feet blackish, claws black, bill black." One of the specimens from Waterstradt has the bill light brown, and has wider pale edges to the secondaries.

This bird is named as a compliment to Mr. John Waterstradt, who made a good collection on Obi Major.

Pachycephala johni has no very close ally, as far as I am aware. It belongs to the group of *P. lineolata* and *examinata* (cf. Nov. Zool. 1900. p. 237), in which the *females* have narrow stripes on the breast, but its bright rufous-cinnamon underside distinguishes it at once from all others.

Type: "♀," or rather ♂, Obi Major. 25. iii. 1902, No. O.129, Waterstradt coll., in Mus. Rothscl.

50. *Cinnyris auriceps* (Gray).

Nectarinia auriceps Gray, *P. Z. S.* 1860. p. 348 (Batjan and Ternate).

Obi Major: Bernstein, Lucas, Doherty, and Waterstradt colls. Native name, "Burong tshui" (Lucas).

51. *Cinnyris frenata* (S. Müll.).

Nectarinia frenata S. Müller, *Land-en-Volkenkunde* p. 173 ("Door ons an de westkust van Nieuw-Guinea ontdekt").

Doherty and Waterstradt sent some examples from Obi Major which do not seem to differ from New Guinea specimens.

52. *Dicaeum schistaceiceps* Gray.

Dicaeum schistaceiceps Gray, *P. Z. S.* 1860. p. 349 ("Batchian and E. Gilolo").

One *female* from Waterstradt, similar to a Batjan *female* collected by William Doherty.

53. *Myzomela simplex rubrotincta* Salvad.

[*Myzomela simplex* Gray, *P. Z. S.* 1860. p. 349 ("Batchian and Gilolo").]

Myzomela rubrotincta Salvad., *Ann. Mus. Civ. Gen.* xii. p. 334 (1878: Obi).

One ♀ from Doherty, two *males* and one *female* from Waterstradt. "Iris pale dull crimson, feet dull leaden, bill nearly black."

The Obi form of this *Myzomela* is not—as said by Dr. Gadow, *Cat. B.* xi. p. 143—intermediate between *Myzomela simplex simplex* and *M. s. rubrobrunnea*, but, on the contrary, the latter is somewhat intermediate between the two others. While *M. simplex simplex* has only a red tinge on the edges of the wings and tail and on the chest, *M. s. rubrobrunnea* has red margins to all the feathers of the back and underside, and *M. s. rubrotincta* has the whole upperside uniform brownish red, the abdomen, thighs, and under tail-coverts washed with pink. The red of the wings and tail is also much brighter and more extended than in *M. s. rubrobrunnea*.

54. *Criniger lucasi* sp. nov.

Criniger supra viridi-olivaceus, subtus flavus, olivaceo tinctus. Differt a *C. chloris* dicto, cui maxime affinis est, loris flavis (necnon fusciscentibus), colore lactiore, subtus purius flavescente, minus olivaceo tincto. Magnitudine *C. chloris* dicti.

Hab. Obi Major.

This very distinct new form of *Criniger* is nearest allied to *C. chloris*, but differs at a glance by its yellow, not brownish, lores. Its colour is generally brighter, the underside of a much purer yellow, less tinged with olive. With the two other species of Moluccan *Criniger* the Obi form has much less to do than with *C. chloris*, *C. mysticalis* from Buru, which has also yellow lores, differs, among other peculiarities, by its yellow eye-lid and the much darker, more olive-greenish underside, with rather distinct pale shafts. *C. affinis* from Ceram and Amboina differs at once in the pure yellow apical third of the tail.

Criniger lucasi is named in honour of Mr. Lucas, of Brussels, who made a very useful collection of birds on Obi Major, which contained, among others, the rare *Neoscolopax rochussenii*.

"Iris deep brown, feet bluish grey, bill pale olive-green, culmen above darker, chiefly at base" (W. Doherty).

We have a series of ten, collected by Doherty and others. The *males* are much larger than the *females* in this and allied species, wings about a centimetre longer.

Doherty sent two eggs of *Criniger lucasi*. They are like those of *C. chloris*, being of a glossless white, spotted all over with deeper and lighter red-brown and some deeper-lying purplish mauve spots. They measure 22·1 : 18·6 and 21·5 : 18·2 mm.

Type: ♂ ad., Obi, September 1897, No. 930, W. Doherty coll., in Mus. Rothsch.

55. *Pitta rufiventris* (Heine).

Coloburis rufiventris Heine, *Journ. f. Orn.* 1859. p. 406 (Loc. incert.—I substitute Batjan as the original locality).

Doherty and Waterstradt obtained specimens of this *Pitta* on Obi Major. "Iris deep brown, feet leaden-blue, bill black, pale at tip above."

The specimens from Obi do not differ from those from Batjan and Halmahera.

56. *Locustella fasciolatus* (Gray) (Migrant).

Acrocephalus fasciolatus Gray, *P. Z. S.* 1860, p. 349 ("Batchian").

♀ ad., Obi Major, September 1897, W. Doherty coll. "Iris pale sepia, feet pale brown, upper mandible black, lower mandible pale, gape yellow." (Migrant from the north.)

Though only a winter visitor to the tropical islands, this species was first described from Batjan, where Wallace had obtained it.

57. *Phylloscopus borealis* (Blas.) (Migrant).

Obi Major, September 1897, Doherty, 2. iv. 1902, Waterstradt. (Migrant from the north.)

58. *Calornis metallicus* (Temm.).

Lampprotornis metallicus Temm., *Pl. Col.* 266 (1824: Amboina).

One example from Obi Major, collected by Lucas. Native name "idi-idi."

59. *Calornis obscura* (Bp.).

Obi Major, Doherty and Waterstradt. "Iris deep brown, bill and feet black" (Doherty).

60. *Corvus orru* Bp.

Doherty obtained examples on Obi Major and Bisa.

61. *Corvus validus* Bp.

Corvus validus Bp., *Consp.* i. p. 385 ("Ceram, Gilolo." The typical habitat is Gilolo [Halmahera], "Ceram" being an error of Bonaparte).

Corvus validus Büttik., *Notes Leyden Mus.* xviii. p. 185 (1897; discussion on type and locality of type, and misuse of name).

Corvus validissimus Schleg., Notice sur le genre *Corvus*, in *Bijdr. tot de Dierk.* 1859, p. 12, Pl. I. f. 21 (1859). (The type of *C. validus* is also the type of *C. validissimus*, teste Büttikofer, *l.c.*)

Mr. Lucas sent two examples of this crow with its large and long beak, and strongly arched upper mandible. The native name is "Burong gaga."

This species is only known from Halmahera, Batjan, and Obi. It is not a representative form of *Corvus orru*, as both occur on Obi Major, and are easily distinguishable from each other.

62. *Lycocorax obiensis* Bernst.

Lycocorax obiensis Bernst., *J. f. O.* 1864, p. 410 (Obi).

A common bird on Obi Major, where it was discovered by Bernstein, and afterwards obtained by Bruijn's hunters, by Guillemard (*P. Z. S.* 1885, p. 573), by Doherty, Lucas, and Waterstradt. Doherty marked the iris as crimson, bill and feet black. Young birds seem to have a brown iris. The native name is, according to Lucas, "Burong andjing." I am inclined to treat all three *Lycocorax* as subspecies: *L. pyrrhopterus pyrrhopterus*, Halmahera; *L. pyrrhopterus obiensis*, Obi; *L. pyrrhopterus morotensis*, Morotai and Rau.

63. *Ptilinopus superbus* (Temm.).

Only one specimen from Lucas, who says it is called "marpati," and a young bird from Waterstradt.

64. *Ptilinopus granulifrons* Hart.

Ptilinopus granulifrons Hartert, *Bull. B. O. C.* vii. p. 35 (Febr. 1898: Obi Major); id., *Nov. Zool.* 1899. p. 219. Pl. IV. fig. 9.

This remarkable little green pigeon agrees in pattern and general colour entirely with *Ptilinopus hyogaster* (corr. *ionogaster*) from Batjan and Halmahera, but it differs strikingly by the presence of a mass of granular fleshly knobs on the forehead, at the base of the bill. The grey of the head is a shade lighter and reaches a little more down on to the occiput, its hind-margin being straight or somewhat convex, not at all concave as is the case in *P. hyogaster*, when properly skinned. The general colour is much more yellowish-green, not grass-green, especially the breast is washed with golden-yellow. The discoverer of this most interesting pigeon was William Doherty, who collected a nice series in September 1897. He marked the bare parts as follows: "♂: iris crimson; feet purple; bill yellow, more olive near tip, crimson at base above, granular wattles orange-ochreous. ♀: iris orange-ochreous, feet dark purple, claws blackish; bill olive-ochreous, crimson at base above, granular wattles at base of bill orange-ochreous." The sexes are, in skin, perfectly alike. Mr. Lucas also sent some skins and informed us that the local name was "marpati," and recently Mr. Waterstradt obtained more specimens.

In my opinion *Ptilinopus granuliformis* is of more interest and importance than any other of the forms peculiar to Obi. It is obviously a close ally and representative of *P. hyogaster*, but with the same right that the genus *Globicera* is separated from *Carpophaga*, it might be distinguished generically, as it has a remarkable "structural" difference, but I am convinced that this would in no way help us, and only add an unnecessary new generic term to our list. On the contrary, the consequence I draw from this case is, that the genus *Globicera* must be suppressed.

65. *Megaloprepia formosa* Gray.

Megaloprepia formosa Gray, *P. Z. S.* 1860. p. 360 ("Gilolo").

Waterstradt's hunters obtained specimens on the hills, about 2000 feet high, of Obi Major. Bernstein met with it on Obi many years ago.

66. *Carpophaga perspicillata* (Temm.).

Columba perspicillata Temm., *Pl. Col.* 246 (1823: Moluccas).

Doherty and Lucas obtained this species. Native name "kuru-kuru."

67. *Carpophaga basilica obiensis* Hart.

[*Ducula basilica* Bonaparte, *Consp.* ii. p. 35 (1854: Gilolo).]

Carpophaga obiensis Hartert, *Bull. B. O. C.* vii. p. 35 (February 1898, Obi Major).

Very different from *C. basilica basilica*, the entire head, throat, foreneck, and breast being much deeper vinous, with a greyish wash; the hindneck darker grey, separated from the vinous head by a rusty patch; abdomen and under tail-coverts deep cinnamon, instead of pale cinnamon. Iris dark crimson, eyelids vermilion;

feet vermilion; bill nearly black" (W. Doherty). (The bare parts of *C. basilica* from Ternate are marked by Doherty as follows: "Iris crimson; feet pale carmine; bill black.") Bernstein's specimens of *C. basilica* from Obi in the Leyden Museum must, of course, belong to this form, but Doherty was its discoverer, as I described it from his examples. Lucas and Waterstradt also got it.

"Kumkum boké" is the native name.

68. **Myristicivora melanura** (Wall.).

Carpophaga melanura Wallace, *P. Z. S.* 1863. p. 33 (Buru).

Bernstein and Guillemard obtained this species in the Obi group (Obi Latu); Lucas and Doherty sent specimens from Obi Major. Local name "Kumkum puti."

69. **Columba albigularis** Bp.

Lucas sent a specimen from Obi Major. Name "Kumkum."

70. **Reinwardtoena reinwardtsi** (Temm.).

Columba Reinwardtsi Temminck, *Pl. Col.* 248 (1823: Celebes!—*errore!* I substitute as the original locality Ternate).

Reinwardtoenas reinwardti obiensis Hart., *Bull. B. O. C.* vii. p. 35 (February 1898: Obi).

Reinwardtoena reinwardtsi reinwardtsi Hart., *Nov. Zool.* 1900. p. 241; Rothsch. & Hart., *Nov. Zool.* 1901. p. 126.

Reinwardtoenas reinwardti Mey. & Wigl., *B. Celebes* ii. p. 642.

In 1898 I erroneously separated the Obi form on account of a yellowish buff face obvious in Doherty's specimens, but recent material has shown that this peculiarity is of no systematic value, as it is clearly the result of the juice of some kind of fruit.

Bernstein, Doherty, Guillemard (Obi Latu), Lucas, and Waterstradt obtained this bird. Native name "Ekor pandjang."

71. **Macropygia amboinensis batchianensis** Wall.

(Cf. *Nov. Zool.* 1901. p. 124.)

Doherty and Waterstradt, as well as Lucas, who calls it also "Ekor pandjang," obtained examples on Obi.

72. **Chalcophaps indica** (L.).

Both sexes sent by Waterstradt from Obi Major.

73. **Caloenas nicobarica** (L.).

Lucas sent a specimen from Obi, where it had already been obtained by Bernstein. Guillemard collected it on Bisa.

74. **Megapodius freycinet freycinet** Quoy. & Gaim.

(Cf. *Nov. Zool.* 1901. p. 138).

Obi: Bernstein. Obi Bisa and Obi Major: Doherty. Obi Major: Lucas. Native name "moleo." Obi Major: Waterstradt.

75. **Neoscolopax rochussenii** (Schleg.).

Scolopax rochussenii Schlegel, *Ned. Tijdschr. Dierk.* iii. p. 254 (1866 : Obi).

This most remarkable woodcock was originally sent by Bernstein from Obi. I am only aware of the existence of three specimens: the type from Obi in the Leyden Museum, a specimen (now in the British Museum) obtained by Mr. Harting from Frank in Amsterdam, said to have come from Ternate, and a third brought home by Lucas from Obi Major in the Tring Museum. Obi is therefore the only locality known for certain as the home of this rare bird. The specimen from Frank is a native-made skin sent home with one of the usual North Moluccan trade-skin lots, and there is no proof that it actually came from Ternate. Mr. Lucas says the bird was called by the natives "Snip utan," which means "wood-snipe." The figure in Seebohm's *Charadriidae* is not well coloured. The upperside is black, with large markings of an ochreous rufous, while on the plate the ground-colour is not black enough, the markings too yellowish, not rufous enough. Our specimen measures as follows: wing 205, tail 77, bill 100, metatarsus 47, middle toe 53 mm.*

76. **Numenius phaeopus variegatus** (Scop.) (Migrant).

Collected on Obi Major by Guillemard and Waterstradt. (Migrant from the north.)

77. **Esacus magnirostris** (Vieill.).

"♂" ad., June 1902, John Waterstradt coll.

78. **Herodias timoriensis** (Less.).

One skin, Obi Major, from Lucas. Native name "Soweko."

79. **Garzetta nigripes** Bp.

One, Obi Major, from Lucas. Native name "Soweko."

80. **Butorides stagnatilis** (Gould).

Also from Lucas, Obi Major. "Soweko."

81. **Tadorna radjah** (Garn.).

Obi Major, Lucas. "Bebeg utan." Already long ago obtained by Bernstein.

82. **Sula sula** (L.).

Obi Major, Lucas. Native name "Bebeg laut."

83. **Sterna bergii** Licht.

Obi Major, Bernstein and Lucas. Called "Pombog tanah" (*vide* Lucas).

84. **Sterna dougalli** Mont.

Obi Major, Bernstein coll. in Mus. Lugd.

85. **Sterna anaethetus** Scop.

Obi, Bernstein coll. in Mus. Lugd.

* While this article was in print we received a skin from the mountains of Patjan.